IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application:	:	Group Art Unit: 2109
Nicholas James Midgley	:	Examiner: Shaq Taha
Serial No.: 10/526,810	:	IBM Corporation
Filed: 03/04/2005	:	Intellectual Property Law
Title: REMOTE DYNAMIC CONFIGURATION	:	Department SHCB/040-3
OF A WEB SERVER TO FACILITATE	:	1701 North Street
CAPACITY ON DEMAND	:	Endicott, NY 13760
Confirmation No.: 8811		

Commissioner for Patents
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APPEAL BRIEF

I. REAL PARTY IN INTEREST

International Business Machines Corporation is the real party in interest.

II. RELATED APPEALS AND INTERFERENCES

There are no related appeals or interferences.

III. STATUS OF CLAIMS

Claims 1-21 were previously canceled.

Claims 28-35 were Finally Rejected and are not Appealed.

Claims 22-27 and 36-37 were Finally Rejected and are Appealed.

IV. STATUS OF AMENDMENTS

There were no Amendments filed after Final Rejection.

V. SUMMARY OF CLAIMED SUBJECT MATTER

Support for claim elements is indicated in plain brackets [ ].

Claim 22 recites a method for allocating servers to a cluster of servers. [Servers 145, 150 and 155 of Figure 1 are in a cluster. Page 8 lines 38-42]. Performance data of a first server [Server 145, 150 or 155 of Figure 1. Page 8 lines 28-36] is automatically sent [Reporting module 205 of Figure 2 or Reporting module 210 of Figure 3. Step 355 of Figure 3. Page 7 line 42 to Page 8 line 5. Page 8 lines 16-26] to a second server. [Management server 140 of Figure 2. Page 8 lines 28-36. Analyser module 230 collects performance data. Steps 510, 505 and 500.] The first server is part of the cluster of servers. [Page 8 lines 38-42]. Based on the performance data, the second server determines if the first server has reached a predetermined upper level of utilization. [Analyzer Module 230 of Figures 2 and 5. Page 8 lines 28-36. Steps 510, 505 and 500.]. If the first server has reached the predetermined upper level of utilization, the second server automatically sends a reconfiguration request to a server responsible for allocating servers to the cluster to allocate another server to the cluster. [Resource Allocation module 235 in server 140. Page 8 line 38 to Page 9 line 15]. In response, the responsible server automatically identifies another, available server and connection information for the other server and automatically allocates the other server to the cluster. [Resource Allocation module 235 in server 140. Page 8 line 38 to Page 9 line 27. Original Claims 2, 11, 15 recite "connection configuration file" and "connection configuration file comprises connection settings". Figure 3 illustrates "Connection Configuration" file 320". Page 8 lines 7-9.].

Claim 26 recites a system for allocating servers to a cluster of servers. [Management Server 140. Servers 145, 150 and 155 of Figure 1 are in a cluster. Page 8 lines 38-42]. There are means for sending performance data of a first server [Reporting module 205 of Figure 2 or Reporting module 210 of Figure 3 reports performance data. Step 355 of Figure 3. Page 7 line 42 to Page 8 line 5. Page 8 lines 16-26.] to a second server. [Management server 140 of Figure 2. Page 8 lines 28-36. Analyser module 230 collects performance data. Steps 510, 505 and 500. "first server" is server 145, 150 or 155 of Figure 1. Page 8 lines 28-36] The first server is part of

the cluster of servers. [Page 8 lines 38-42]. There are means, based on the performance data, within the second server for determining if the first server has reached a predetermined upper level of utilization, [Analyzer Module 230 of Figures 2 and 5. Page 8 lines 28-36. Steps 510, 505 and 500] and if the first server has reached the predetermined upper level of utilization, automatically sending a reconfiguration request to a server responsible for allocating servers to the cluster to automatically allocate another server to the cluster. [Resource Allocation module 235 in server 140. Page 8 line 38 to Page 9 line 15]. There are means, responsive to the reconfiguration request, within the responsible server for automatically identifying another, available server and connection information for the other server and automatically allocating the other server to the cluster. [Resource Allocation module 235 in server 140. Page 8 line 38 to Page 9 line 27. Original Claims 2, 11, 15 recite "connection configuration file" and "connection configuration file comprises connection settings". Figure 3 illustrates "Connection Configuration" file 320". Page 8 lines 7-9.].

Claim 36 recites a system for allocating servers to a cluster of servers. [Management Server 140. Servers 145, 150 and 155 of Figure 1 are in a cluster. Page 8 lines 38-42]. There are means for collecting performance data of each of a first server and a second server in the cluster of servers. [Management server 140 of Figure 2. Page 8 lines 28-36. Analyser module 230 collects performance data. Steps 510, 505 and 500. "first server" is one of Servers 145, 150 or 155 and "second server" is another of Servers 145, 150 or 155 of Figure 1. Page 8 lines 28-36] There are means, based on the performance data of the first server and the second server, for determining if the first server or the second server has reached a predetermined upper level of utilization, [Analyzer Module 230 of Figures 2 and 5. Page 8 lines 28-36. Steps 510, 505 and 500] and if so, automatically sending a reconfiguration request to allocate another server to the cluster. [Resource Allocation module 235 in server 140. Page 8 line 38 to Page 9 line 15]. There are means, responsive to the reconfiguration request, for automatically identifying another available server which is not currently allocated to the cluster and connection information for the other available server and automatically allocating the other available server to the cluster. [Resource Allocation module 235 in server 140. Page 8 line 38 to Page 9 line 27. Original Claims 2, 11, 15 recite "connection configuration file" and "connection configuration file

comprises connection settings". Figure 3 illustrates "Connection Configuration" file 320". Page 8 lines 7-9.].

The corresponding structure for each means plus function element is indicated in stylized brackets { }. The means plus function elements also encompass equivalents.

Claim 26. A system for allocating servers to a cluster of servers, said system comprising:

means for sending performance data of a first server to a second server, said first server being part of said cluster of servers; {Reporting module 205 and equivalents report performance data to management server 140. Some of the "server statistics... are sent to the management server 140 at step 410". Page 8 - foregoing excerpts from lines 20, 21 and 25.}

means, based on the performance data, within said second server for determining if said first server has reached a predetermined upper level of utilization, {Analyzer Module 230 and equivalents of Figure 2. Page 8 lines 30-32. Step 505} and if said first server has reached said predetermined upper level of utilization, automatically sending a reconfiguration request to a server responsible for allocating servers to said cluster to automatically allocate another server to said cluster; {Resource Allocation Module 235 and equivalents. Page 8 line 40 to Page 9 line 2}. and

means, responsive to said reconfiguration request, within said responsible server for automatically identifying another, available server and connection information for said other server and automatically allocating said other server to said cluster. {Resource Allocation module 235 and equivalents. Page 9 lines 2-3 and 8-14}.

Claim 27. A system as set forth in claim 26 further comprising:

means, based on the performance data, within said second server for determining if said first server is functional but under utilized such that said first server is no longer needed in said cluster, {Resource Allocation Module 235 and equivalents, part of Step 600, Page 8 excerpts

from lines 38, 39, and 41: "resource allocation module 235 determines ... if a server should be removed from the current pool of allocated servers and returned to the free resource pool."}, and if said first server is functional but under utilized such that said first server is no longer needed in said cluster, automatically sending a reconfiguration request to said server responsible for allocating servers to said cluster to de-allocate said first server from said cluster; {Resource Allocation Module 235 and equivalents. Part of Step 620, Page 9 excerpts from lines 11-12: "At step 620 once the configuration setting file has been received"} and

means, responsive to the de-allocation reconfiguration request, within said responsible server for automatically de-allocating said first server from said cluster. {Resource Allocation Module 235 and equivalents. Part of Step 620, Page 9 excerpts from lines 11-12: At step 620 ... the configuration setting file is updated with the current instruction for the selected server and sent to the resource allocation module".}

36. A system for allocating servers to a cluster of servers, said system comprising:

means for collecting performance data of each of a first server and a second server in said cluster of servers; {Analyser module 230, and equivalents, collects performance data. Page 8 lines 28-29.}

means, based on the performance data of said first server and said second server, for determining if said first server or said second server has reached a predetermined upper level of utilization, {Analyzer Module 230 and equivalents of Figure 2. Page 8 lines 30-32. Step 505} and if so, automatically sending a reconfiguration request to allocate another server to said cluster; {Resource Allocation Module 235 and equivalents. Page 8 line 40 to Page 9 line 2} and

means, responsive to said reconfiguration request, for automatically identifying another available server which is not currently allocated to said cluster and connection information for said other available server and automatically allocating said other available server to said cluster. {Resource Allocation module 235 and equivalents. Page 9 lines 2-3 and 8-14}.

37. A system as set forth in claim 36 further comprising:

means, based on the performance data of said first server, for determining if said first server is functional but under utilized such that said first server is no longer needed in said cluster, {Resource Allocation Module 235 and equivalents, part of Step 600, Page 8 excerpts from lines 38, 39, and 41: "resource allocation module 235 determines ... if a server should be removed from the current pool of allocated servers and returned to the free resource pool."}, and if said first server is functional but under utilized such that said first server is no longer needed in said cluster, automatically sending a reconfiguration request to de-allocate said first server from said cluster; {Resource Allocation Module 235 and equivalents. Part of Step 620, Page 9 excerpts from lines 11-12: "At step 620 once the configuration setting file has been received"} and

means, responsive to the de-allocation reconfiguration request, for automatically de-allocating said first server from said cluster. {Resource Allocation Module 235 and equivalents, part of Step 620, Page 9 excerpts from lines 11-12: At step 620 ... the configuration setting file is updated with the current instruction for the selected server and sent to the resource allocation module".}

VI. GROUNDS OF REJECTION TO BE REVIEWED UPON APPEAL

Claims 22-27 and 36-37 were rejected under 35 USC 102(e) based on US Patent 6,801,949 to Bruck et al.

VII. ARGUMENT

A claim can be rejected under 35 USC 102 only if each and every element as recited in the claim is found in a single prior art reference. Richardson v. Suzuki Motor Co., 868 F.2d 1226, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).

A claim cannot be obvious under 35 USC 103 unless (a) there is a reason that a person of ordinary skill in the art would have combined the references, and (b) all the claim elements are taught or suggested by the prior art. See In re Vaeck, 947 F.2d 488, 20 USPQ2d 1438, 1443 (Fed Cir. 1991) and KSR Int'l Co. v. Teleflex, Inc., No. 04-1350 (USSC 30 April 2007).

Rejection of Claims 22-23, 25-26 and 36 under 35 USC 102(e)

Claims 22-23, 25-26 and 36 were rejected under 35 USC 102 based on US Patent 6,801,949 to Bruck et al. Applicant respectfully traverses this rejection based on the following.

Claim 22 recites a method for allocating servers to a cluster of servers. Performance data of a first server is automatically sent to a second server. The first server is part of the cluster of servers. Based on the performance data, the second server determines if the first server has reached a predetermined upper level of utilization. If the first server has reached the predetermined upper level of utilization, the second server automatically sends a reconfiguration request to a server responsible for allocating servers to the cluster to allocate another server to the cluster. In response, the responsible server automatically identifies another, available server and connection information for the other server and automatically allocates the other server to the cluster.

Bruck et al. disclose:

"A distributed server cluster for computer network data traffic dynamically reconfigures traffic assignments among multiple server machines for increased network availability. **If one of the servers becomes unavailable**, traffic assignments are moved among the multiple servers such that network availability is substantially unchanged. The front-layer servers of the server cluster communicate with each other such that automatic, dynamic traffic assignment reconfiguration occurs in response to machines being added and deleted from the cluster, with no loss in functionality for the cluster overall, in a process that is transparent to network users, thereby providing a distributed server system functionality that is scalable.

Thus, operation of the distributed server cluster remains consistent as machines are added and deleted from the cluster. Each machine of the distributed cluster can continue with any applications that may be running, such as for implemented its server functioning, while participating in the distributed server cluster and dynamic reconfiguration processing of the present invention. In this way, the invention substantially maintains network availability regardless of **machine failures**, so that there is a single point of failure and no lapse in server cluster functionality." (Emphasis added) Bruck et al. Column 3 lines 19-40.

"The operation of the servers on both layers is monitored, and when a server **failure** at either layer is detected, the system automatically shifts network traffic from the failed machine to one or more operational machines, reconfiguring front layer servers as needed without interrupting operation of the server system. The server system automatically accommodates additional machines in the server cluster, without service interruption." (Emphasis added) Column 2 lines 47-54.

Thus, Bruck et al. are concerned with responding to machine **failures** by re-routing network traffic to the operational machines in the cluster. Bruck et al. also disclose:

"If the starting computer is actually attempting to **recover** or regenerate a token, and is not involved in an initial start sequence, then it could use the UDP message to send a "911" or notification message, as described above. When the computer rejoins the cluster, it will use the current cluster setup information in a token message for the cluster properties. ... If the starting computer receives a reply to the UDP message, then it knows other machines are active in the cluster, and it will attempt to join the cluster." Column 14 line 65 to Column 15 line 2 and Column 15 lines 40-42.

Thus, Bruck et al. return a server to its cluster when the server returns to operability. In contrast to independent claim 22, Bruck et al do not automatically add another server to a cluster based on performance data in response to a predetermined upper level of utilization being reached for a server in the cluster. Therefore, the rejection under 35 USC 102 should be withdrawn.

Moreover, there is no suggestion in Bruck et al. to automatically add another server to a cluster based on performance data in response to a predetermined upper level of utilization being reached for a server in the cluster. Bruck et al. merely return a server to its cluster when it returns to operability. Therefore, no rejection under 35 USC 103 should be made.

Claims 23 and 25 depend on claim 22, and therefore, distinguish over the prior art for the same reasons as does claim 22.

Independent claim 26 distinguishes over the prior art for the same reasons as does claim 22.

Independent claim 36 distinguishes over the prior art for the same reasons as does claim 22.

Rejection of Claims 24, 27 and 37 under 35 USC 102(e)

Claim 24 depends on claim 22 and therefore distinguishes over Bruck et al. for the same reasons that claim 22 distinguishes thereover. Dependent claim 24 also recites that based on the performance data, the second server determines if the first server is functional but under utilized such that the second server is no longer needed in the cluster. If the first server is functional but under utilized and no longer needed in the cluster, the second server automatically sends a reconfiguration request to the server responsible for allocating servers to the cluster to de-allocate the first server from the cluster. In response, the responsible server automatically de-allocates the first server from the cluster.

As explained above, Bruck et al. remove a server from a cluster when the server fails. Bruck et al. do not automatically remove a functional server from a cluster based on performance data where the server is under utilized such that the server is no longer needed in the cluster. Therefore, the rejection of claim 24 under 35 USC 102 should be reversed for a second reason. Moreover, there is no suggestion in Bruck et al. to automatically remove a functional server from a cluster in response to performance data where the server is under utilized such that the server is

no longer needed in the cluster. Bruck et al. merely remove a server from a cluster when the server fails. Therefore, no rejection of claim 24 under 35 USC 103 should be made.

Claim 27 depends on claim 26 and therefore distinguishes over Bruck et al. for the same reasons that claim 26 distinguishes thereover. Dependent claim 27 further distinguishes over Bruck et al. for the same reasons that claim 24 further distinguishes over Bruck et al.

Claim 37 depends on claim 36 and therefore distinguishes over Bruck et al. for the same reasons that claim 36 distinguishes thereover. Dependent claim 37 further distinguishes over Bruck et al. for the same reasons that claim 24 further distinguishes over Bruck et al.

Based on the foregoing, the rejection of claims 22-27 and 36-37 should be reversed.

Respectfully submitted,

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VIII. CLAIMS APPENDIX (I.E. CLAIMS INVOLVED IN APPEAL).

22. A method for allocating servers to a cluster of servers, said method comprising the steps of:

automatically sending performance data of a first server to a second server, said first server being part of said cluster of servers;

based on the performance data, said second server determining if said first server has reached a predetermined upper level of utilization; and

if said first server has reached said predetermined upper level of utilization, said second server automatically sending a reconfiguration request to a server responsible for allocating servers to said cluster to allocate another server to said cluster, and in response, said responsible server automatically identifying another, available server and connection information for said other server and automatically allocating said other server to said cluster.

23. A method as set forth in claim 22 wherein the step of automatically allocating said other server to said cluster comprises the steps of updating a configuration file of said responsible server to list said other server as part of said cluster.

24. A method as set forth in claim 22 further comprising the steps of:

based on the performance data, said second server determining if said first server is functional but under utilized such that said first server is no longer needed in said cluster; and

if said first server is functional but under utilized such that said first server is no longer needed in said cluster, said second server automatically sending a reconfiguration request to said server responsible for allocating servers to said cluster to de-allocate said first server

from said cluster, and in response, said responsible server automatically de-allocating said first server from said cluster.

25. A method as set forth in claim 24 wherein the step of automatically de-allocating said first server from said cluster comprises the step of updating a configuration file of said responsible server to remove said first server from said cluster.

26. A system for allocating servers to a cluster of servers, said system comprising:

means for sending performance data of a first server to a second server, said first server being part of said cluster of servers;

means, based on the performance data, within said second server for determining if said first server has reached a predetermined upper level of utilization, and if said first server has reached said predetermined upper level of utilization, automatically sending a reconfiguration request to a server responsible for allocating servers to said cluster to automatically allocate another server to said cluster; and

means, responsive to said reconfiguration request, within said responsible server for automatically identifying another, available server and connection information for said other server and automatically allocating said other server to said cluster.

27. A system as set forth in claim 26 further comprising:

means, based on the performance data, within said second server for determining if said first server is functional but under utilized such that said first server is no longer needed in said cluster, and if said first server is functional but under utilized such that said first server is no longer needed in said cluster, automatically sending a reconfiguration request to said server responsible for allocating servers to said cluster to de-allocate said first server from said cluster; and

means, responsive to the de-allocation reconfiguration request, within said responsible server for automatically de-allocating said first server from said cluster.

36. A system for allocating servers to a cluster of servers, said system comprising:

means for collecting performance data of each of a first server and a second server in said cluster of servers;

means, based on the performance data of said first server and said second server, for determining if said first server or said second server has reached a predetermined upper level of utilization, and if so, automatically sending a reconfiguration request to allocate another server to said cluster; and

means, responsive to said reconfiguration request, for automatically identifying another available server which is not currently allocated to said cluster and connection information for said other available server and automatically allocating said other available server to said cluster.

37. A system as set forth in claim 36 further comprising:

means, based on the performance data of said first server, for determining if said first server is functional but under utilized such that said first server is no longer needed in said cluster, and if said first server is functional but under utilized such that said first server is no longer needed in said cluster, automatically sending a reconfiguration request to de-allocate said first server from said cluster; and

means, responsive to the de-allocation reconfiguration request, for automatically de-allocating said first server from said cluster.

IX. EVIDENCE APPENDIX

There is no evidence entered and relied upon in this Appeal.

X. RELATED PROCEEDINGS APPENDIX

There are no related appeals or interferences, and therefore no copies of related decisions rendered by the Board of Appeals and Patent Interferences.